

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
12 May 2005 (12.05.2005)

PCT

(10) International Publication Number  
**WO 2005/043138 A1**

(51) International Patent Classification<sup>7</sup>: **G01N 21/64,**  
**A61B 5/00**

(21) International Application Number:  
PCT/IB2004/003559

(22) International Filing Date: 29 October 2004 (29.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/515,697 31 October 2003 (31.10.2003) US

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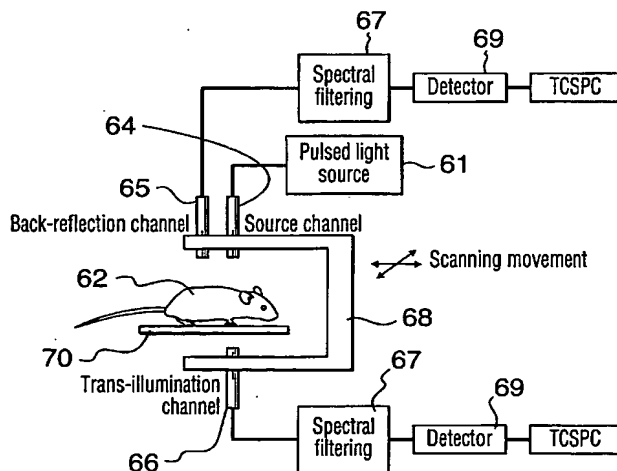
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(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: A TIME-DOMAIN METHOD AND APPARATUS FOR DETERMINING THE DEPTH AND CONCENTRATION OF  
A FLUOROPHORE IN A TURBID MEDIUM



(57) Abstract: Methods and apparatuses for determining the depth and concentration of fluorophores in a turbid medium are disclosed. The method advantageously provides for a rapid estimation of the depth of the fluorophore using characteristics of a temporal point spread function. The concentration of the fluorophore can be determined using the method of the present invention by combining a calculated depth of the fluorophore with a measurement of the intensity of the emitted fluorescence. The intensity can be accurately measured by the apparatus disclosed herein which combine back-reflection and trans-illumination geometries for the source of light injecting and detection.



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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**Published:**

— *with international search report*